5SG100

USER'S MANUAL

❋ **Support Intel Pentium, MMX/Cyrix/IBM 6x86MX/MII & AMD K5, K6, K6-2 & IDT C6 CPUs.**

❋ **Support auto detect CPU Voltage.**

❋ **Support auto detect four positive Voltages and Fan Speed.**

❋ **Support Parity check or Ecc Function.**

❋ **Support Ultra DMA/33 Function.**

❋ **Support Fully AGP 1.0 Specification.**

❋ **Support switching mode Voltage regulator on Board.**

❋ **Support 60/66/75/83/95MHz and 100MHz (optional).**

❋ **Support Wake on Lan. (The ATX power supply supports larger than 600 mA).**

❋ **Support K/B Power-on , modem Ring-on , Win95 Power off , RTC Alarm.**

❋ **Support 3 steps ACPI LED.**

❋ **Thermal Protection : 1.When the system is overheating, it will stop for a few secs. 2.Then back to normal status after the system's temp. step down . 3. Users better check CPU fan immediately.**

Pentium â Processor PCI - ISA BUS MAINBOARD

REV. 2.0 Second Edition

R-20-02-080805

Aug 5, 1998 Taipei, Taiwan

I. Quick Installation Guide:

SWITCH	SW1								SW2			
CPU	1	2	3	4	5	6	7	8	1	2	3	4
1. Pentiumª Processor 90 MHz	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
2. Pentiumª Processor 100 MHz	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
3. Pentiumª Processor 120 MHz	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
4. Pentiumª Processor 133 MHz	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
5. Pentiumª Processor 150 MHz	OFF	ON	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
6. Pentiumª Processor 166 MHz	OFF	ON	ON	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
7. Pentiumª Processor 180 MHz	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
8. Pentiumª Processor 200 MHz	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
9. Intel MMX-150MHz	OFF	ON	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
10. Intel MMX-166MHz	OFF	ON	ON	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
11. Intel MMX-200MHz	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
12. Intel MMX-233MHz	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
13. P54CT-150 MHz	OFF	ON	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
14. P54CT-166 MHz	OFF	ON	ON	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
15. P54CTB-150 MHz	OFF	ON	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
16. P54CTB-166 MHz	OFF	ON	ON	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
17. P54CTB-200 MHz	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
18. AMDK5-PR133	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
19. AMDK5-PR166	OFF	ON	ON	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF

SWITCH	SW1								SW2			
CPU	1	2	3	4	5	6	7	8	1	2	3	4
20. AMD-K6/166 (2.9V)	OFF	ON	ON	OFF	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
21. AMD-K6/180 (2.9V)	OFF	OFF	ON	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
22. AMD-K6/200 (2.9V)	OFF	OFF	ON	OFF	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
23. AMD-K6/233 (3.2V)	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
24. AMD-K6/266 (66*4 2.2V)	OFF	ON	OFF	OFF	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
25. AMD-K6/300 (66*4.5 2.2V)	OFF	ON	ON	OFF	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
26. Cyrix/IBM 6x86-120MHz-PR150+	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
27. Cyrix/IBM 6x86-133MHz-PR166+	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
28. Cyrix/IBM 6x86-150MHz-PR200+	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
29. Cyrix/IBM 6x86L- PR150+ (2.8V)	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
30. Cyrix/IBM 6x86L-PR166+ (2.8V)	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
31. Cyrix/IBM 6x86L-PR200+ (2.8V)	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
32. Cyrix/IBM 6x86MX-PR150 (60*2 2.9V)	OFF	ON	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
33. Cyrix/IBM 6x86MX-PR166 (60*2.5 2.9V)	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
34. Cyrix/IBM 6x86MX-PR166 (66*2 2.9V)	OFF	ON	OFF	OFF	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
35. Cyrix/IBM 6x86MX-PR200 (60*3 2.9V)	OFF	OFF	ON	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
36. Cyrix/IBM 6x86MX-PR200 (66*2.5 2.9V)	OFF	ON	ON	OFF	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
37. Cyrix/IBM 6x86MX-PR200 (75*2 2.9V)	OFF	ON	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	ON	OFF

38. Cyrix/IBM 6x86MX-PR233 (66*3 2.9V)	OFF	OFF	ON	OFF	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
SWITCH	SW1								SW2			
CPU	1	2	3	4	5	6	7	8	1	2	3	4
39. Cyrix/IBM 6x86MX-PR233 (75*2.5 2.9V)	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	OFF	ON	OFF
40. Cyrix/IBM 6x86MX-PR233 (83*2 2.9V)	OFF	ON	OFF	OFF	OFF	ON	ON	OFF	ON	OFF	ON	OFF
41. Cyrix/IBM 6x86MX-PR266 (66*3.5 2.9V)	OFF	OFF	OFF	OFF	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
42. Cyrix/IBM 6x86MX-PR266 (75*3 2.9V)	OFF	OFF	ON	OFF	OFF	ON	ON	OFF	OFF	OFF	ON	OFF
43. Cyrix/IBM 6x86MX-PR266 (83*2.5 2.9V)	OFF	ON	ON	OFF	OFF	ON	ON	OFF	ON	OFF	ON	OFF
44. Cyrix MII-300 (66*3.5 2.9V)	OFF	OFF	OFF	OFF	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
45.IDT WinChip C6-225 (75*3 3.52V)	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
46.IBM MX PR333 (100*2.5 2.9V)	OFF	ON	ON	OFF	OFF	ON	ON	OFF	ON	ON	ON	OFF
47. AMD-K6-2/250 (100*2.5 2.2V)	OFF	ON	ON	OFF	ON	OFF	OFF	OFF	ON	ON	ON	OFF
48. AMD-K6-2/266 (66*4 2.2V)	OFF	ON	OFF	OFF	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
49. AMD-K6-2/300 (100*3 2.2V)	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF	ON	ON	ON	OFF
50. AMD-K6-2/333 (95*3.5 2.2V)	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON	ON	OFF
51. AMD-K6-2/350 (100*3.5 2.2V)	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON	ON	ON	OFF

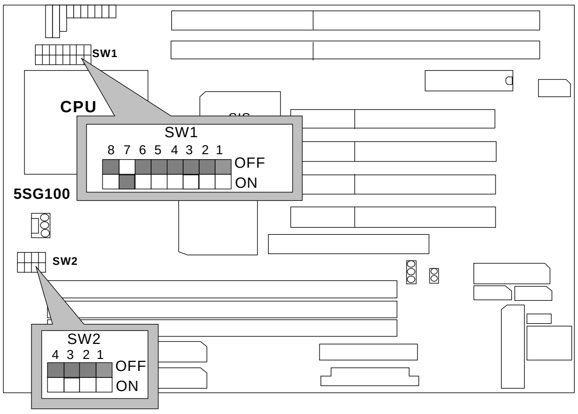
✶ Note : If Cyrix 6x86 is being used, please check the CPU Date Code after 605.
✶ Note : We don't recommend you to setup your system speed to 100 MHz because this frequencies is not the standard specifications .for CPU, Chipset and most of the pheriphrals. Whether your system can run 100 MHz properly will depend on your hardware configurations : CPU, SDRAM, Cards, etc.

The default setting is 100*3 at 2.2V for AMD K6/300 and AMD K6-2/300

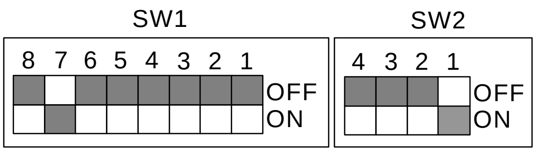
SWITCH	SW1								SW2			
CPU	1	2	3	4	5	6	7	8	1	2	3	4

AMD-K6/300 (100*3 2.2V) AMD-K6-2/300 (100*3 2.2V)	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF	ON	ON	ON	OFF

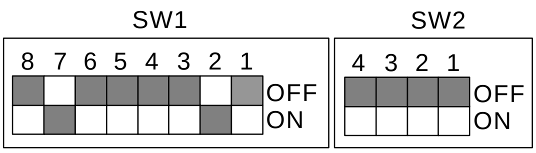
1. Pentiumâ Processor 90 MHz



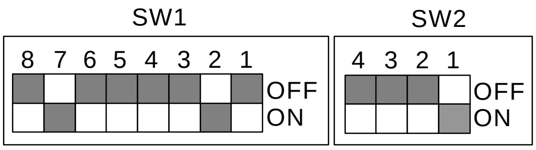
2.Pentiumâ Processor 100 MHz



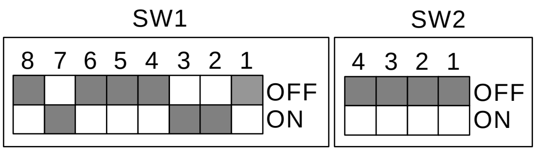
3.Pentiumâ Processor 120 MHz



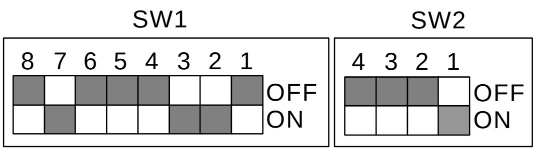
4.Pentiumâ Processor 133 MHz



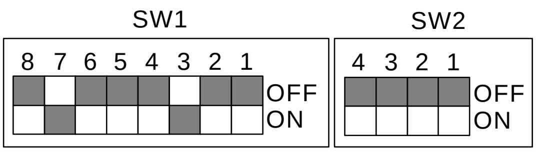
5.Pentiumâ Processor 150 MHz



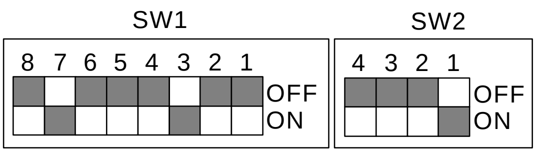
6.Pentiumâ Processor 166 MHz



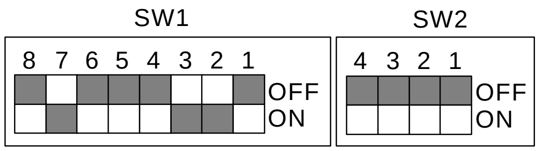
7.Pentiumâ Processor 180 MHz



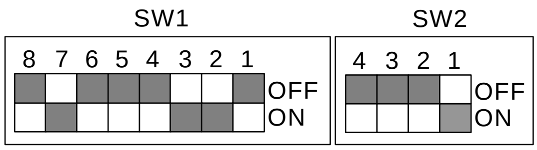
8.Pentiumâ Processor 200 MHz



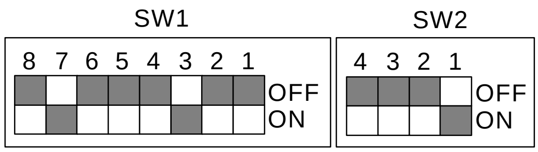
9.Intel MMX-150 MHz



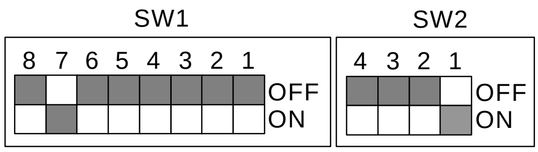
10.Intel MMX-166 MHz



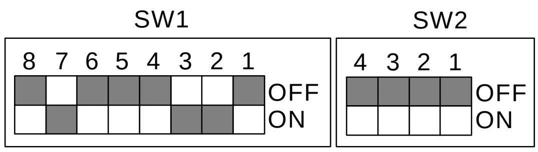
11. Intel MMX-200 MHz



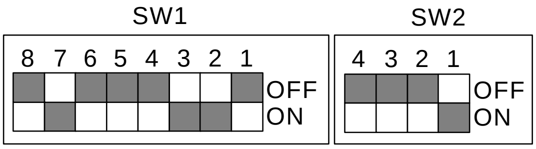
12. Intel MMX-233 MHz



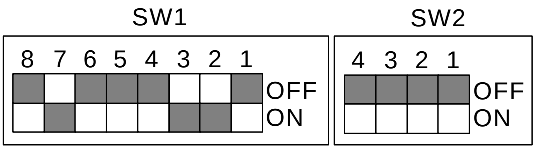
13. P54CT-150 MHz



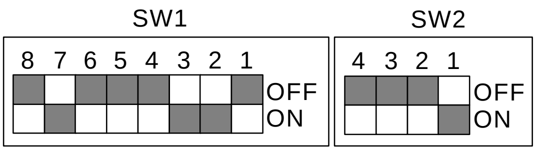
14. P54CT-166 MHz



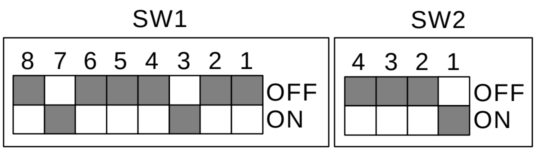
15. P54CTB-150 MHz



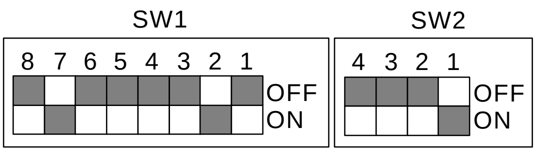
16. P54CTB-166 MHz



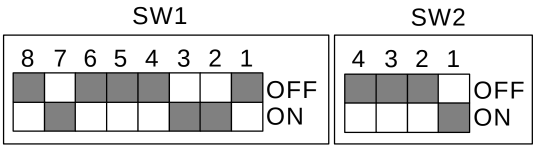
17. P54CTB-200 MHz



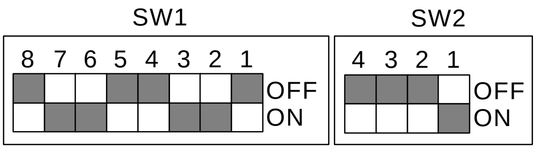
18. AMDK5-PR133



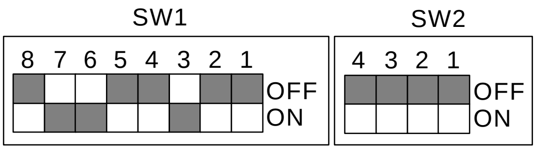
19. AMDK5-PR166



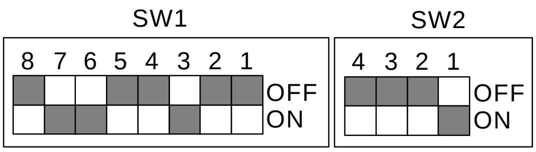
20. AMD-K6/166 (2.9V)



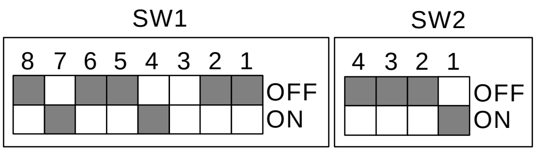
21. AMD-K6/180 (2.9V)



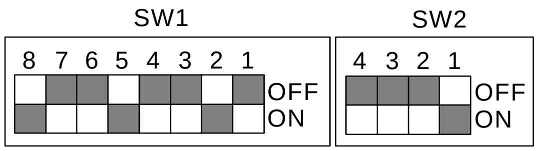
22. AMD-K6/200 (2.9V)



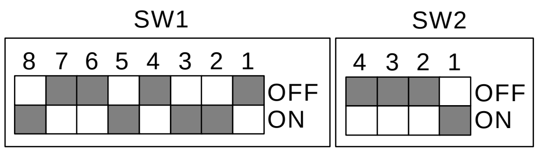
23. AMD-K6/233 (3.2V)



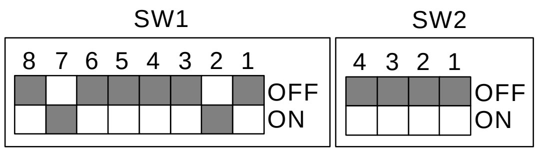
24. AMD-K6 /266 (66*4 2.2V)



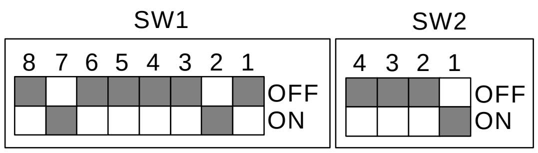
25. AMD-K6 /300 (66*4.5 2.2V)



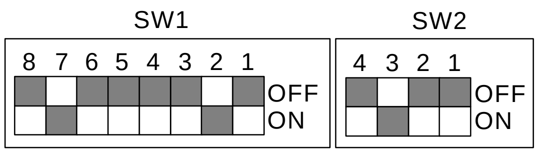
26. Cyrix / IBM 6x86-120 MHz-PR150+



27. Cyrix /IBM 6x86-133 MHz-PR166+



28. Cyrix /IBM 6x86-150 MHz-PR200+



29. Cyrix / IBM 6x86L-PR150+ (2.8V)

SW1	8	7	6	5	4	3	2	1
	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF

SW2	4	3	2	1
	OFF	OFF	OFF	OFF

30. Cyrix / IBM 6x86L-PR166+ (2.8V)

SW1	8	7	6	5	4	3	2	1
	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF

SW2	4	3	2	1
	OFF	OFF	OFF	ON

31. Cyrix / IBM 6x86L-PR200+ (2.8V)

SW1	8	7	6	5	4	3	2	1
	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF

SW2	4	3	2	1
	OFF	ON	OFF	OFF

32. Cyrix / IBM 6x86MX-PR150 (60x2 2.9V)

SW1	8	7	6	5	4	3	2	1
	OFF	ON	ON	OFF	OFF	OFF	ON	OFF

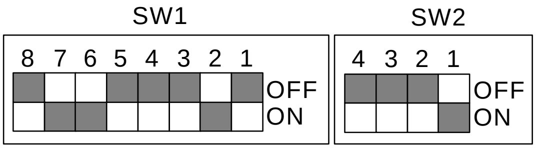
SW2	4	3	2	1
	OFF	OFF	OFF	OFF

33. Cyrix / IBM 6x86MX-PR166 (60x2.5 2.9V)

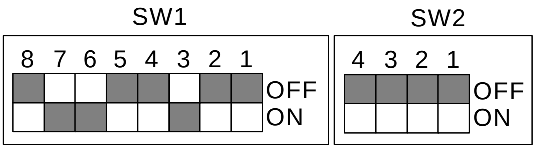
SW1	8	7	6	5	4	3	2	1
	OFF	ON	ON	OFF	OFF	ON	ON	OFF

SW2	4	3	2	1
	OFF	OFF	OFF	OFF

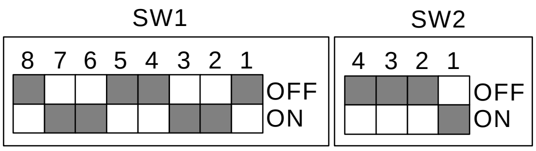
34. Cyrix / IBM 6x86MX-PR166 (66x2 2.9V)



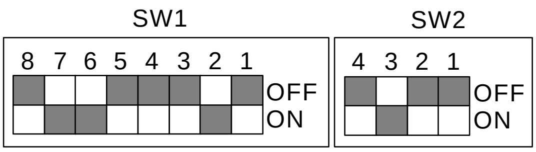
35. Cyrix / IBM 6x86MX-PR200 (60x3 2.9V)



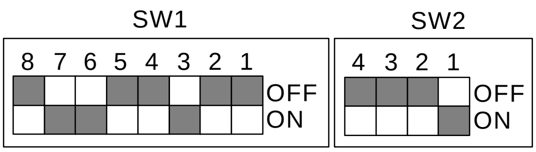
36. Cyrix / IBM 6x86MX-PR200 (66x2.5 2.9V)



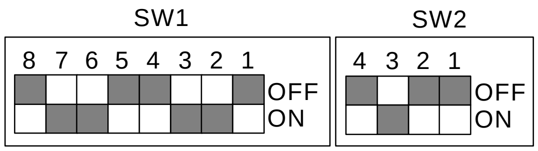
37. Cyrix / IBM 6x86MX-PR200 (75x2 2.9V)



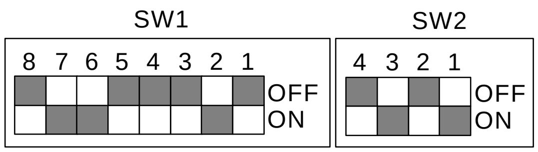
38. Cyrix / IBM 6x86MX-PR233 (66x3 2.9V)



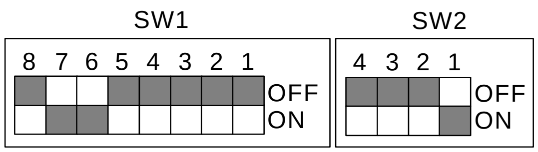
39. Cyrix / IBM 6x86MX-PR233 (75x2.5 2.9V)



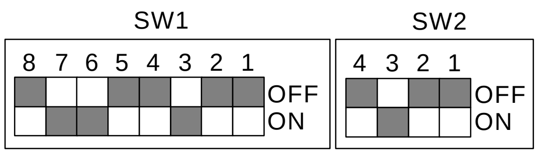
40. Cyrix / IBM 6x86MX-PR233 (83x2 2.9V)



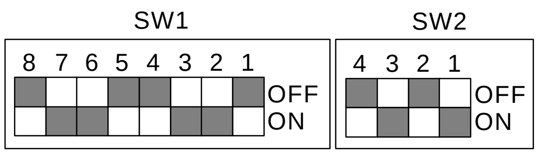
41. Cyrix / IBM 6x86MX-PR266 (66x3.5 2.9V)



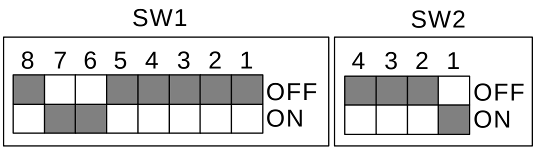
42. Cyrix / IBM 6x86MX-PR266 (75x3 2.9V)



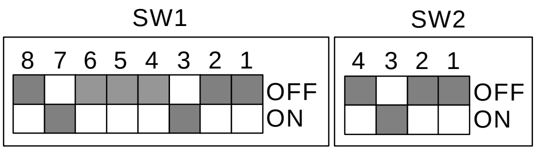
43. Cyrix / IBM 6x86MX-PR266 (83x2.5 2.9V)



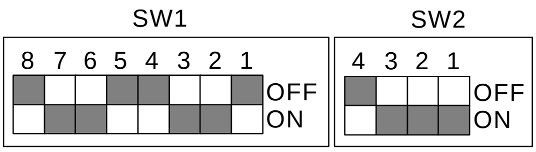
44. Cyrix MII-300 (66x3.5 2.9V)



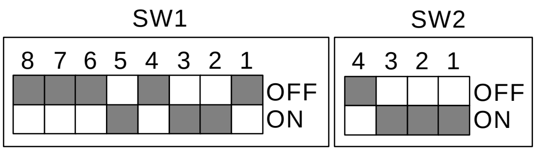
45. IDT WinChip C6-225 (75*3 3.52V)



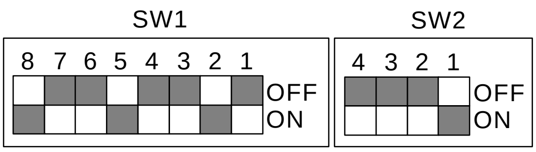
46. IBM MX PR333 (100*2.5 2.9V)



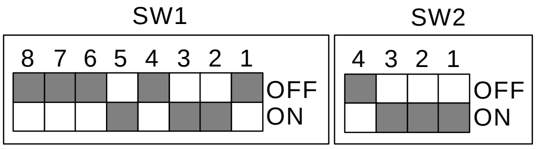
47. AMD-K6-2/250 (100*2.5 2.2V)



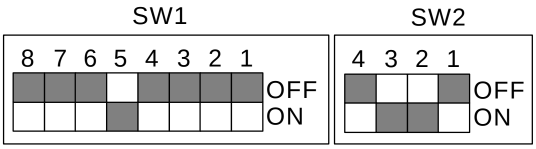
48. AMD-K6-2/266 (66*4 2.2V)



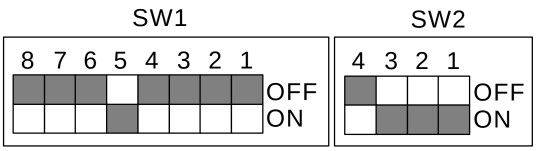
49. AMD-K6-2/300 (100*3 2.2V)



50. AMD-K6-2/333 (95*3.5 2.2V)

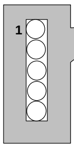


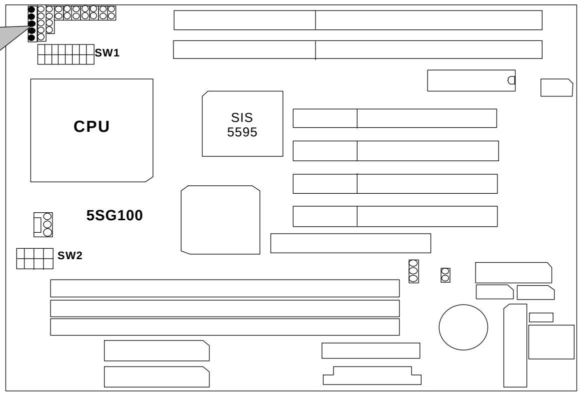
51. AMD-K6-2/350 (100*3.5 2.2V)



II. Quick Installation Guide of Jumper setting:

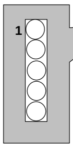
IR : Infrared Connector (Optional)

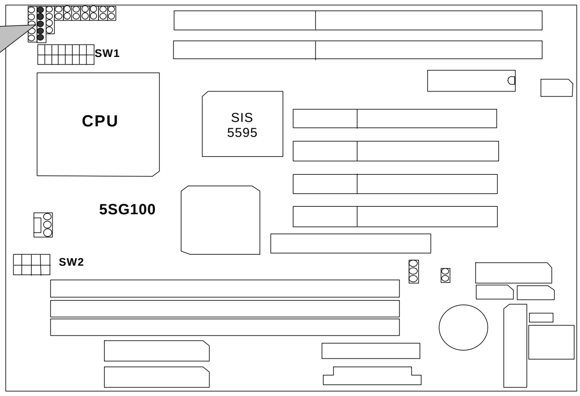




Pin No.	Function
1	IR Data Output
2	GND
3	IR Data Input
4	Signal
5	POWER (+)

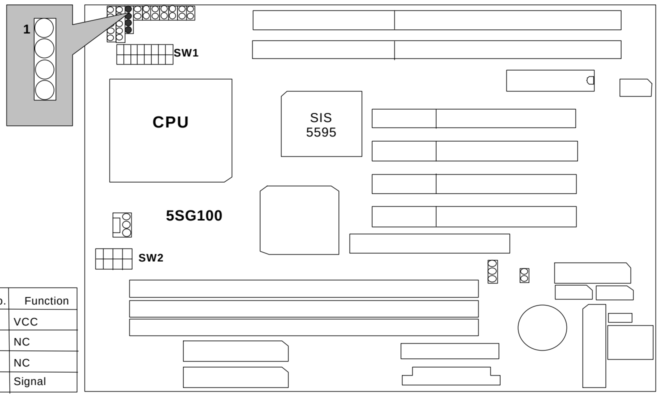
PWR : ACPI LED / Key-Lock Connector





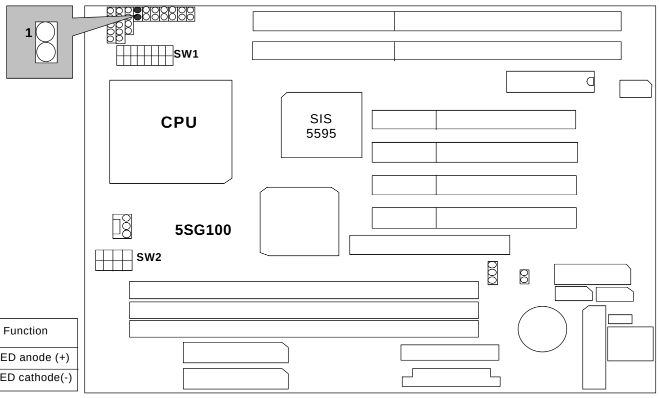
Pin No.	Function
1	LED anode (+)
2	LED cathode (-)
3	LED cathode (-)
4	Key-Lock
5	GND

SPK : Speaker Connector



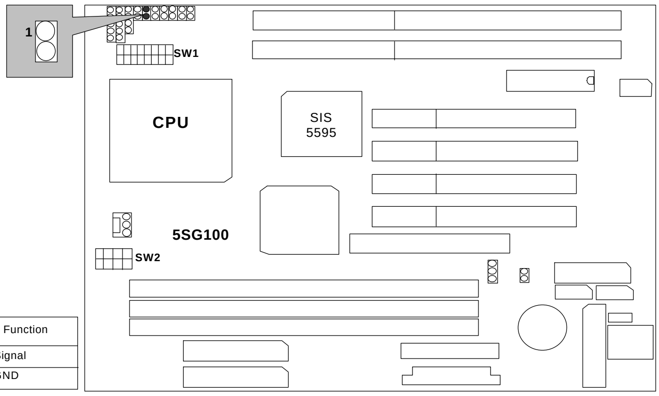
Pin No.	Function
1	VCC
2	NC
3	NC
4	Signal

TD : Turbo LED Connector



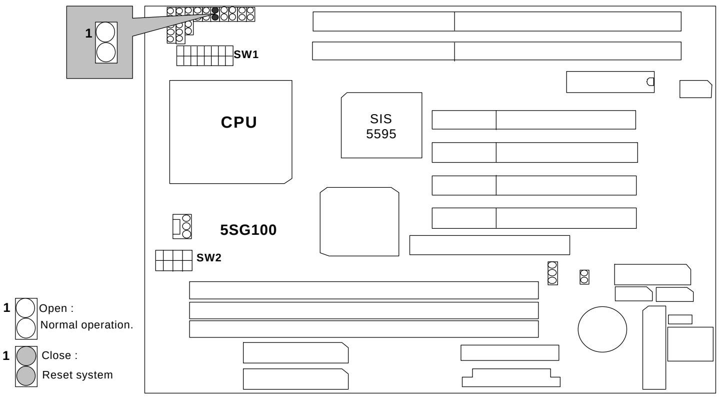
Pin No.	Function
1	LED anode (+)
2	LED cathode(-)

TB : Turbo Switch Connector

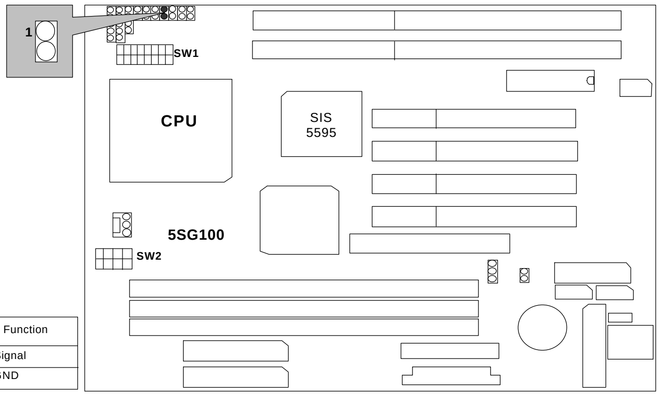


Pin No.	Function
1	Signal
2	GND

RST : Reset Switch

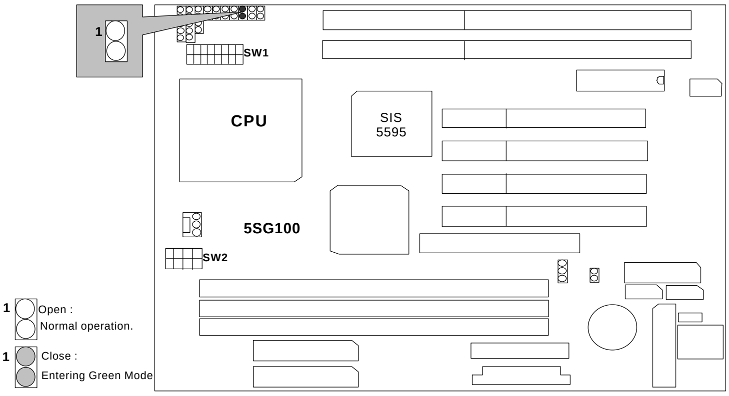


GD : Green LED Connector

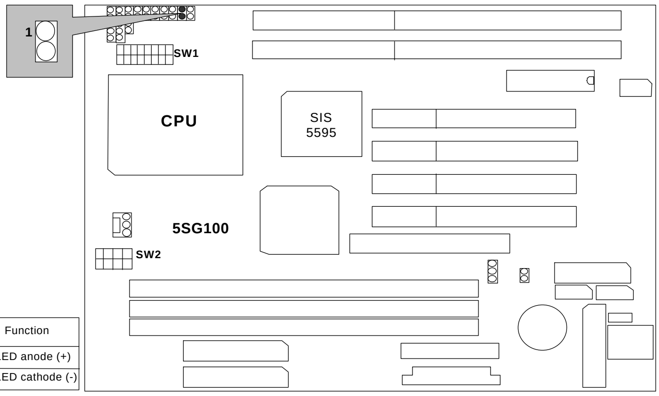


Pin No.	Function
1	Signal
2	GND

GN : Green Function Switch



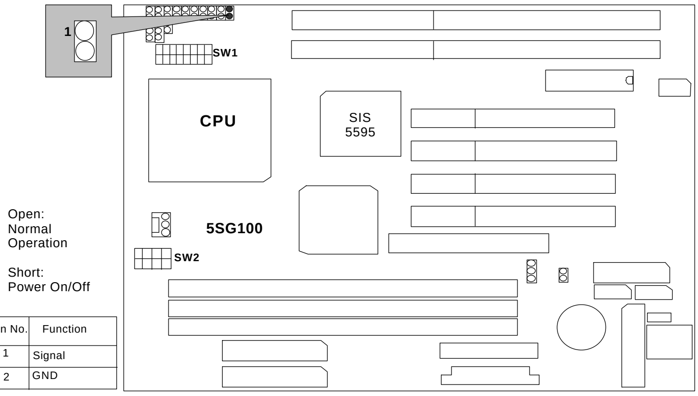
HD : IDE Hard Disk Active LED



Pin No.	Function
1	LED anode (+)
2	LED cathode (-)

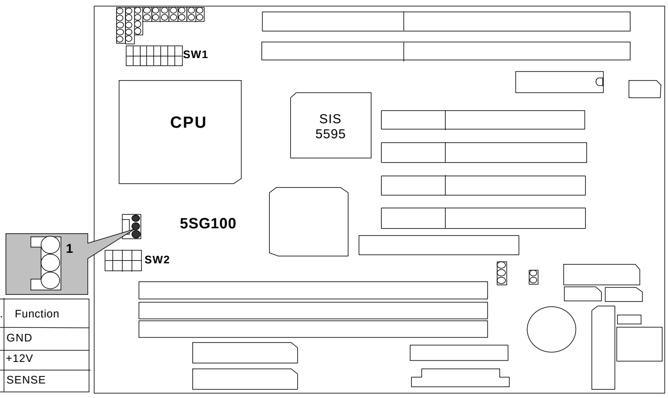
SOFT PWR : POWER ON/OFF

(For ATX Power Supply Use Only)



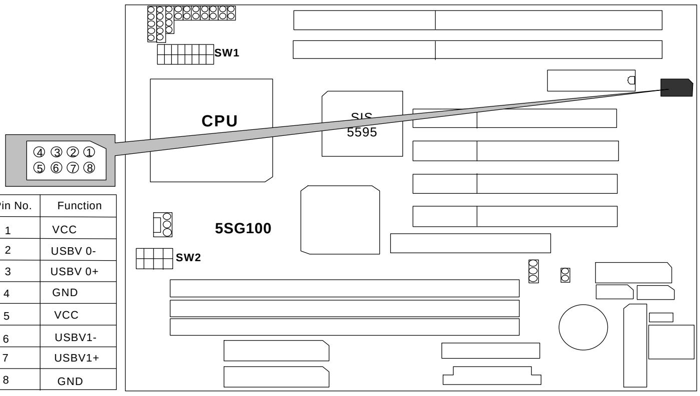
Pin No.	Function
1	Signal
2	GND

FAN PWR: CPU Cooling Fan Power Connector



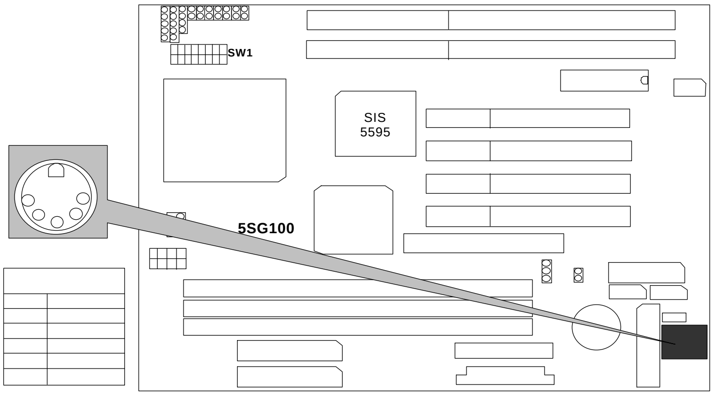
Pin No.	Function
1	GND
2	+12V
3	SENSE

USB :USB Port

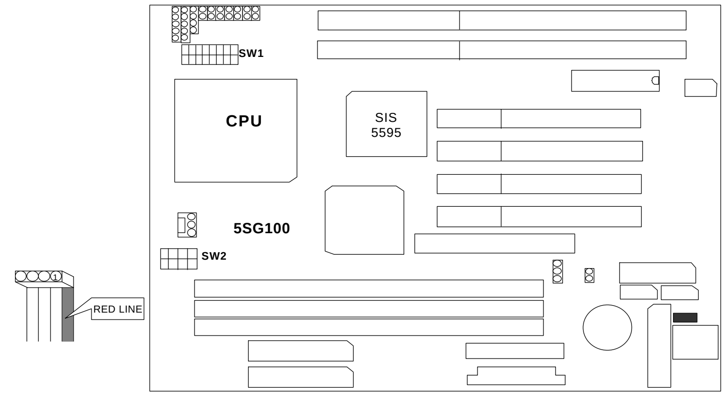


Pin No.	Function
1	VCC
2	USBV 0-
3	USBV 0+
4	GND
5	VCC
6	USBV1-
7	USBV1+
8	GND

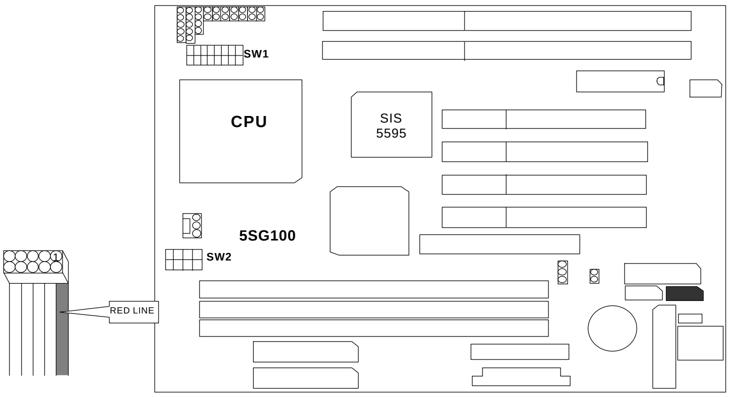
K.B : AT Keyboard



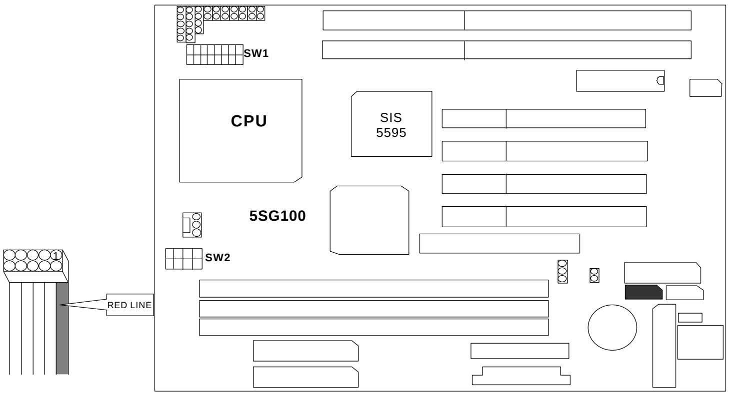
PS/2 : PS/2 Mouse



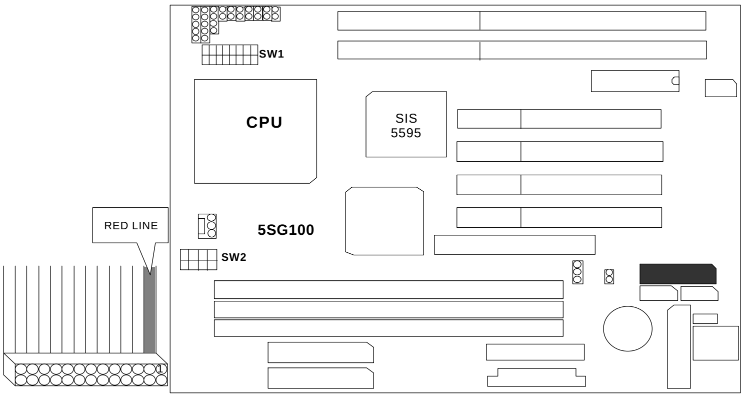
COM A : COM A PORT



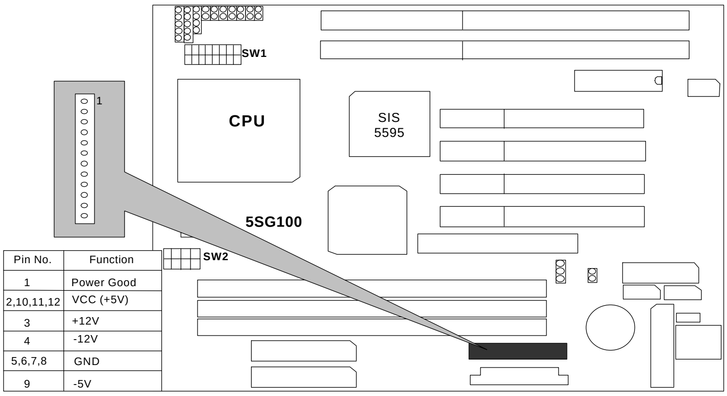
COM B : COM B PORT



LPT : LPT PORT

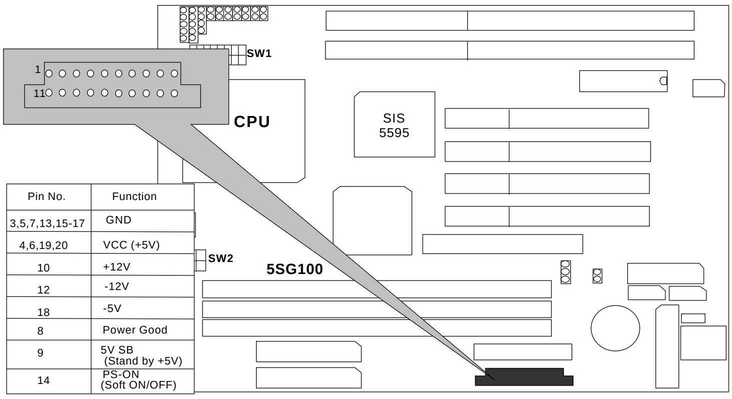


J1 : AT Power Connector



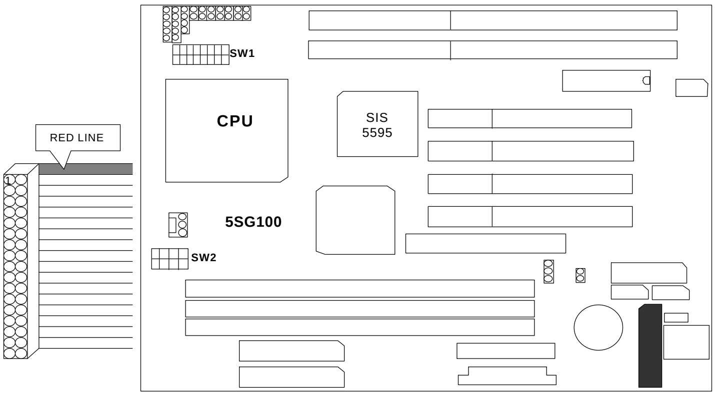
Pin No.	Function
1	Power Good
2,10,11,12	VCC (+5V)
3	+12V
4	-12V
5,6,7,8	GND
9	-5V

U1 : ATX Power Connector

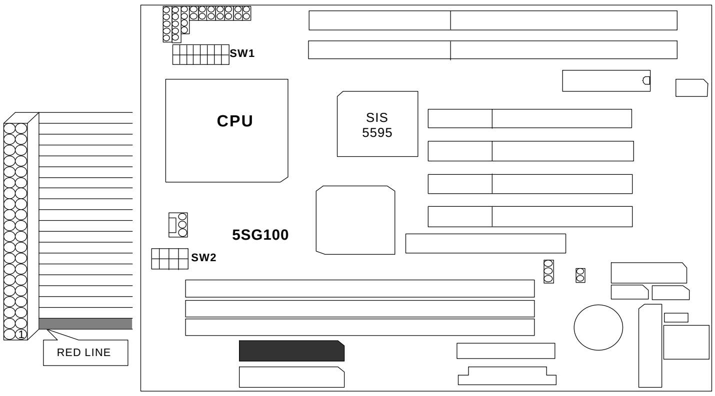


Pin No.	Function
3,5,7,13,15-17	GND
4,6,19,20	VCC (+5V)
10	+12V
12	-12V
18	-5V
8	Power Good
9	5V SB (Stand by +5V)
14	PS-ON (Soft ON/OFF)

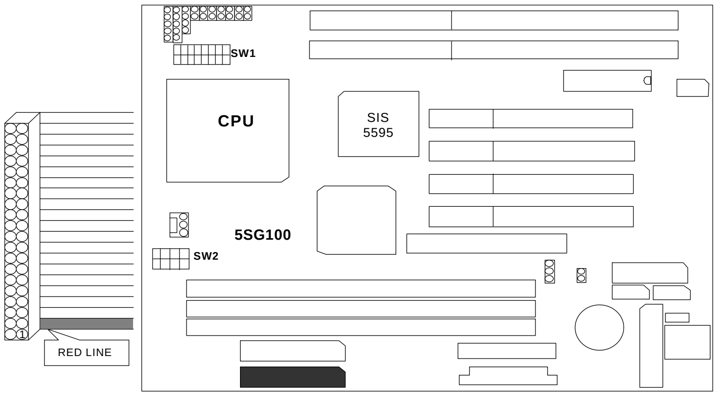
FLOPPY : FLOPPY PORT



IDE1 : For Primary IDE port

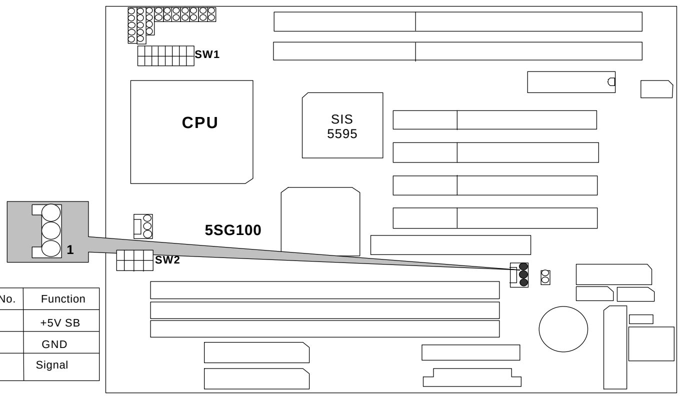


IDE2 : For Secondary IDE port



JP15 : Wake on Lan

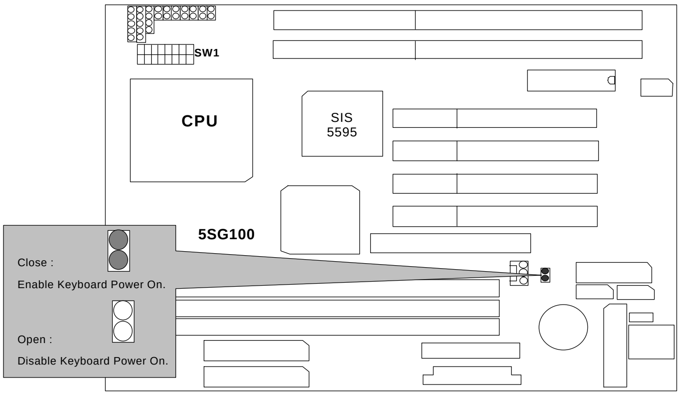
(for ATX Power Supply only)



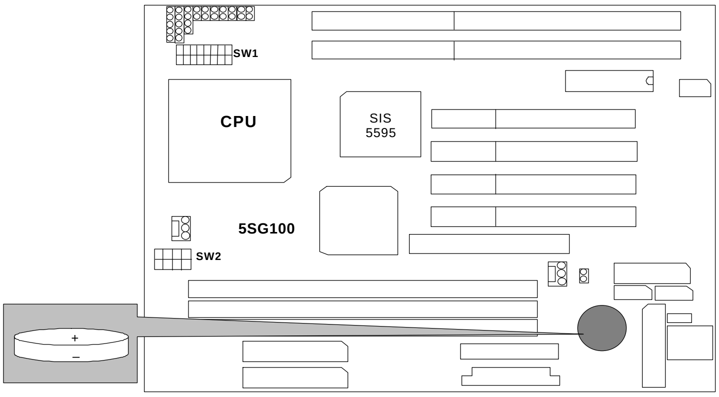
Pin No.	Function
1	+5V SB
2	GND
3	Signal

JP2 : Keyboard Power-on

(for ATX Power Supply only)



BAT 1: For Battery



- Danger of explosion if battery is incorrectly replaced.
- Replace only with the same or equivalent type recommended by the manufacturer.
- Dispose of used batteries according to the manufacturer's instructions.

SW : For CPU INT./EXT.FREQ.

O	:ON
X	:OFF

SW1

SW1	2	3	8
X 1.5	X	X	X
X 2	O	X	X
X 2.5	O	O	X
X 3	X	O	X
X 3.5	X	X	X
X 4	O	X	O
X 4.5	O	O	O
X 5	X	O	O
X 5.5	X	X	O

SW1	4	5	6	7
AUTO	X	X	X	O
2.1V	X	X	O	X
2.2V	X	O	X	X
2.3V	X	O	O	X
2.4V	O	X	X	X
2.5V	O	X	O	X
2.6V	O	O	X	X
2.7V	O	O	O	X
2.8V	X	X	X	O
2.9V	X	X	O	O
3.0V	X	O	X	O
3.1V	X	O	O	O
3.2V	O	X	X	O
3.3V	O	X	O	O
3.4V	O	O	X	O
3.5V	O	O	O	O

SW2

CPU	PCI	AGP	1	2	3
60MHz	30	60	X	X	X
66MHz	33	66	O	X	X
68MHz	34	68	X	O	X
75MHz	37.5	75	O	O	X
75MHz	30	60	X	X	O
83MHz	33	66	O	X	O
95MHz	32	64	X	O	O
100MHz	33	66	O	O	O

III. Top Performance Test Setting:

Users have to modify the value for each item in chipset features as follow:

Chipset features setup

```
                    ROM PCI/ISA BIOS (2A5IKG0A)
                     CHIPSET FEATURES SETUP
                      AWARD SOFTWARE, INC.

RAS Pulse Width Refresh : 4T          System BIOS Cacheable    : Enabled
RAS Precharge Time      : 3T          Video  BIOS Cacheable    : Enabled
RAS to CAS Delay        : 3T          Memory Hole at 15M-16M   : Disabled
CPU to PCI Post Write   : 3T          Temperature Control      : Auto
ISA Bus Clock Frequency : PCICLK/3    Auto Detect DIMM/PCI Clk: Enabled
NA# Enable              : Enabled     Spread Spectrum          : Disabled
SDRAM CAS Latency       : 2T          Current CPUFAN Speed     : 0 RPM
SDRAM WR Retire Rate    : X-1-1-1     Current CPU VCore        : 2.84 V
SDRAM Wait State Control: 1WS         Current +3.3 V           : 3.61 V
RAMW# Assertion Timing  : 2T          Current +5 V             : 5.21 V
CAS Precharge Time (EDO): 2T          Current +12 V            : 12.41 V
CAS# Pulse Width for EDO: 2T
CAS Precharge Time (FP) : 2T
CAS# Pulse Width for FP : 2T
Enhanced Memory Write   : Enabled     ESC : Quit         ↑↓→← : Select Item
Read Prefetch Memory RD : Enabled     F1  : Help         PU/PD/+/- : Modify
CPU to PCI Burst Mem. WR: Enabled     F5  : Old Values   (Shift)F2 : Color
MA Current Rating       : 8mA         F6  : Load BIOS  Defaults
AGP Aperture Size       : 64MB        F7  : Load Setup Defaults
```

** Each value of items as above depends on your hardware configuration : CPU , SDRAM , Cards , etc.
Please modify each value of items If your system does not work properly .